

What is Claimed:

1 1. A method of manufacturing a combustion chamber of a water
2 heater, said method comprising the steps of:

3 forming a skirt;

4 spot welding an edge portion of a plate to the skirt; and

5 circumferentially welding the edge portion of the plate to the skirt,
6 thereby forming a seal between the plate and the skirt.

1 2. The method recited in claim 1, said forming step comprising:

2 rolling sheet metal to position edges thereof proximal one another;

3 and

4 welding the edges to form a continuous skirt.

1 3. The method recited in claim 1, said forming step comprising
2 circumferentially expanding a portion of the skirt.

1 4. The method recited in claim 3, said spot welding step
2 comprising welding the edge portion of the plate to the expanded portion of the skirt.

1 5. The method recited in claim 1, further comprising the step of
2 welding a burner support to the plate.

1 6. The method recited in claim 5, wherein said step of welding the
2 burner support to the plate comprises welding a bracket to the plate.

1 7. The method recited in claim 5, further comprising the step of
2 configuring the plate for said step of welding the burner support to the plate.

1 8. The method recited in claim 7, wherein said step of configuring
2 the plate comprises substantially closing openings on the plate where the burner
3 support is to be welded to the plate.

1 9. The method recited in claim 1, wherein said spot welding step
2 comprises spot welding an edge portion of the plate to an inner surface of the skirt.

1 10. The method recited in claim 9, wherein said circumferential
2 welding step comprises circumferentially welding the edge portion of the plate to the
3 inner surface of the skirt.

1 11. The method recited in claim 1, wherein said forming step
2 comprises forming a substantially cylindrical skirt.

1 12. The method recited in claim 1, wherein the plate is substantially
2 round, said method further comprising the step of press fitting the plate into the
3 skirt.

1 13. The method recited in claim 12, said press fitting step
2 comprising creating a seal between the edge portion of the plate and an inner
3 surface of the skirt.

1 14. The method recited in claim 1, wherein said spot welding step
2 comprises welding the edge portion of the plate to an inner surface of the skirt.

1 15. The method recited in claim 1, wherein said circumferential
2 welding step comprises forming a secondary seal between the plate and an inner
3 surface of the skirt.

1 16. A method of manufacturing a combustion chamber of a water
2 heater, said method comprising the steps of:

3 forming a skirt;

4 circumferentially expanding a portion of the skirt; and

5 welding a plate to the expanded portion of the skirt.

1 17. The method recited in claim 16, wherein said circumferentially
2 expanding step comprises forming a shoulder in the skirt adjacent which an edge
3 portion of the plate can be positioned.

1 18. The method recited in claim 17, further comprising the step of
2 positioning the edge portion of the plate adjacent the shoulder formed in the skirt.

1 19. The method recited in claim 16, said welding step comprising
2 spot welding an edge portion of the plate to the skirt.

1 20. The method recited in claim 16, said welding step comprising
2 circumferentially welding the edge portion of the plate to the skirt, thereby forming a
3 seal between the plate and the skirt.

1 21. A method of manufacturing a portion of a combustion chamber
2 for use in a water heater, said method comprising the steps of:

3 welding a plate having openings to a skirt; and

4 welding a burner support to the plate at a location substantially devoid
5 of the openings.

1 22. The method recited in claim 21, said step of welding a plate
2 comprising welding a plate having louvers to the skirt.

1 23. The method recited in claim 21, said step of welding a burner
2 support to the plate comprising welding a bracket to the plate.

1 24. The method recited in claim 21, wherein the openings are
2 defined by louvers, said step of welding the burner support further comprising

3 welding the burner support to the plate at a location where the louvers are
4 substantially closed.

1 25. The method recited in claim 21, further comprising at least
2 partially closing the louvers at the location.

1 26. The method recited in claim 21, further comprising the steps of:

2 forming a skirt; and

3 welding an edge portion of the plate to the skirt.

1 27. The method recited in claim 26, said welding step further
2 comprising:

3 spot welding an edge portion of the plate to the skirt; and

4 circumferentially welding the edge portion of the plate to the skirt,
5 thereby forming a seal between the plate and the skirt at least partially closing the
6 louvers at the location.

1 28. The method recited in claim 26, further comprising the steps of:

2 circumferentially expanding a portion of the skirt; and

3 welding the plate to the expanded portion of the skirt.